This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-11 (canceled)

12 (New): A tube bundle heat exchanger comprising

at least one pair of inner and outer jacket walls defining a channel adapted for carrying a heating or cooling medium, the channel having an axis and a substantially annular cross section;

a tube bundle disposed within the channel, the tube bundle including a plurality of tubes extending substantially parallel to the channel axis, each of the tubes having a mid-point;

at least one ring extending from an inner side mounted to the inner jacket wall to a medium flow-through side disposed at a distance from the outer jacket wall, the ring having a plurality of bores for receiving and positioning the tubes, the medium flow-through side of the ring being spaced at a distance from the mid-points of an outermost set of the tubes, defining a perimeter contour and a web surrounding all of the outermost set of the tubes; and

at least one disc extending from an outer side mounted to the outer jacket wall to a medium flow-through side disposed at a distance from the inner jacket wall, the disc having a plurality of bores for receiving and positioning the tubes, the medium flow-through side of the disc being spaced at a distance from the mid-points of an innermost set of the tubes, defining a perimeter contour and a web surrounding all of the innermost set of the tubes;

wherein the at least one ring and at least one disc define a zigzag pattern as seen in the axial direction of the channel.

13 (New): The tube bundle heat exchanger of claim 12 wherein the ring web has a width defined by the distance between an outer wall of each tube of the outermost set of tubes and the medium flow-through side of the ring and the disc web has a width defined by the distance between an outer wall of each tube of the innermost

set of tubes and the medium flow-through side of the disc, the ring web width and the disc wed width each being substantially constant over the perimeter contour.

14 (New): The tube bundle heat exchanger of claim 13 wherein the width of each web is between 3 and 10 mm.

15 (New): The tube bundle heat exchanger of claim 13 wherein the width of each web is less than 3 mm.

16 (New): The tube bundle heat exchanger of claim 12 wherein the perimeter contours of the ring and the disc have an undulating shape.

17 (New): The tube bundle heat exchanger of claim 12 wherein the perimeter contours of the ring and the disc are at least partially parallel to an imaginary line connecting two or more tube mid-points.

18 (New): The tube bundle heat exchanger of claim 12 wherein the heat exchanger comprises a plurality of pairs of inner and outer jacket walls, a one of the pairs of inner and outer jacket walls defining an inner channel and at least one of the pairs of inner and outer jacket walls defining at least one outer channel, the inner channel and at least one outer channel being concentric with each other.

19 (New): The tube bundle heat exchanger of claim 18 wherein the rings and discs are disposed in the at least one outer channel.

20 (New): The tube bundle heat exchanger of claim 12 wherein the tube bundle tubes are U-tubes or straight tubes.

21 (New): The tube bundle heat exchanger of claim 12 wherein the rings and the discs have a crescent shape.

22 (New): The tube bundle heat exchanger of claim 12 wherein the rings or the discs have a crescent shape.

23 (New): The tube bundle heat exchanger of claim 12 wherein the bores of the rings and the discs are arranged in a triangular, square or other geometrical pattern.